

Notice of Allowability

Application No.

09/812,323

Examiner

Mitra Kianersi

Applicant(s)

GARRETT ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/05/2005.
2. ☒ The allowed claim(s) is/are 1-15.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 8/13/01
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.


JASON CARDONE
SUPERVISORY PATENT EXAMINER

Allowable Subject Matter

The rejections have been overcome by the amendment and remarks and that the pending claims 1-15 are in condition for allowance.

Claims 1-15 are allowed.

The following is an examiner's statement of reasons for allowance:

The primary reason for the allow of claims 1-15 are:

The above-mentioned claims are patentable because no pertinent prior art could be found which discloses the current limitations of Allowable Subject, the independent claim 1 as amended, and also claim 8 with similar elements recite the a) providing the plurality of intermediate servers to route local and non-local data packets within the high-speed access network infrastructure using only destination-based packet forwarding; b) providing the at least one managed access point server to receive only non-local packets from the plurality of intermediate servers and to route the non-local data packets to the plurality of service networks using only source address-based policy routing; c) assigning a network address to a customer of the high-speed access network infrastructure, the network address based on a subscription of the customer to a service network, wherein the address is assigned from a list of network addresses that are dynamically allocated only to customers of the high-speed access network infrastructure that are subscribers of the service network; d) receiving a local data packet from the customer at one of the plurality of intermediate servers; e) forwarding the local data packet within the high-speed access network infrastructure using only destination-based packet forwarding; f) receiving a non-local data packet from the customer at one of the plurality of intermediate servers; g) forwarding the non-local data packet to a managed access point router using only destination-based packet forwarding; h) receiving the non-local data packet at the managed access point router. The interconnections between a plurality of packet-switched service networks and an access network are localized into managed access points. Routers in the access network can advantageously forward packets to the managed access points using conventional routing procedures, thus enabling the access network to provide local packet-switched

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services. The managed access points use source address-based policy to determine to which service network to forward a packet. source address-based policy routing.

Conventional routing is destination-based; the router consults an internal routing table which maps the destination addresses of all inbound packets to a physical interface address for use for outgoing packets. Policy routing schemes, however, will selectively choose different paths for different packets even where the packet's destination address may be the same. Since network access devices are assigned addresses associated with a particular network service provider, the source address based policy routing scheme ensures packets from a network access device will go to the appropriate service network. On packet source address, All intermediate routers within the IP access network 570, i.e. 571...573, use normal destination-based forwarding procedures for destinations that are not local to the network 570. No configuration of policy in the intermediate routers is necessary.

i) comparing a source address of the non-local data packet to the list of network addresses, and j) forwarding the packet to a router in the service network only when the source address matches a network address from the list. 180 FIG. 3 sets forth the processing performed at a router in the access network, e.g. router 130 in FIG. 1. At step 301, the router receives an incoming packet. At step 302, the router reads the packet header and retrieves the packet filtering rules, typically stored in an access list as further described below. At steps 303, 305, and 307, the router applies the packet filtering rules. At step 303, FIG. 6 sets forth a flowchart of the processing performed at a 270 managed access point router, e.g. router 575 in FIG. 5, illustrating an embodiment of this aspect of the invention. The particular managed access point router 575 is assumed to be connected to two service networks, e.g. service networks 551 and 552 in FIG. 5, while a second managed access point router 574 provides access to a third service network, service network 553. At step 601, the router receives an incoming packet. At step 602, the router reads the packet header and retrieves the packet filtering rules, as well as decapsulates any encapsulated packets, as further described herein. At steps 603, 605, 607, and 609, the router applies the packet filtering rules. At step 603, the router compares the source IP address in the

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packet header to a list of addresses allocated to subscribers of services of a first 280 service provider, e.g. operating service network 551 in FIG. 5. If the source address matches one of these addresses, then at step 604 the router forwards the packet to a router in service network 551, e.g. router 541 in FIG. 5. At step 605, the router compares the source IP address in the packet header to a list of addresses allocated to subscribers of services of a second service provider, e.g. 285 operating service network 552 in FIG. 5. If the source IP address matches one of these addresses, then at step 606 the router forwards the packet to a router in service network 552, e.g. router 542 in FIG. 5. At step 607, the router compares the source IP address in the packet header to a list of addresses allocated to subscribers of services of a third service provider, e.g. operating service network 290 553 in HG. 5, which is not connected to this particular managed access point. Regarding claims 1 and 8, Rao does not teach or suggest the combination of recitations (a)-(j) above. Rao instead is primarily concerned with routing telephone call packets, not local and non-local data packets. Intermediate servers of Rao use many routing policies and not just destination-based routing. The centralization of source address-based routing policies only in the managed access point servers allows the inventive network to avoid use of interconnection points to each service network at every regional access network site, the present invention, does not require interconnection points to each service network at every regional access network site, and avoids potential routing loops in the network, managed access point providing access to the relevant service network. By overriding normal routing procedures, however, these procedures may introduce potential routing loops absent significant coordination between the routers external to known routing protocols. This risk can be minimized by centralizing the policy routing function in a single router that provides the interfaces to the service networks.

For these reasons, the rejection of remaining dependent claims 2-7 and 9-15 are also withdrawn.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mitra Kianersi whose telephone number is (571) 272-3915. The examiner can normally be reached on 8:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Cordone can be reached on (571) 272-3933. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mitra Kianersi
Jan/10/2006


JASON CARDONE
SUPERVISORY PATENT EXAMINER